

**CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM  
STATEMENT OF INVESTMENT POLICY**

**FOR  
LEHMAN AGGREGATE PROGRAM**

**April 21, 2008**

*This Policy is effective immediately upon adoption and supersedes all previous Self-Funded Healthcare and Lehman Aggregate Program policies.*

**I. PURPOSE**

The CalPERS Total Fund Statement of Investment Policy adopted by the CalPERS Investment Committee ("Committee"), sets forth CalPERS' overarching investment purposes and objectives with respect to all its investment programs.

This document sets forth the investment policy ("Policy") for the Lehman Aggregate Program ("LA Program"). The design of this Policy ensures that investors, managers, consultants, and other participants selected by the California Public Employees' Retirement System ("CalPERS") take prudent and careful action while managing the LA Programs. Additionally, use of this Policy assures sufficient flexibility in managing investment risks and returns associated with the LA Programs.

**II. STRATEGIC OBJECTIVE**

The LA Programs shall be managed to accomplish the following:

- A. Diversify CalPERS overall investment programs;
- B. Dampen the overall risk of CalPERS' investment programs; and
- C. Enhance CalPERS' total returns.

**III. RESPONSIBILITIES**

- A. CalPERS' Investment Staff ("Staff") is responsible for the following:
  - 1. All aspects of portfolio management and oversight including monitoring, analyzing, and evaluating performance relative to the appropriate benchmark.
  - 2. Reporting quarterly on the performance and risk metrics to the Committee.

3. Monitoring internal and external managers in the implementation of, and compliance with, the Policy. Staff shall report concerns, problems, material changes, and all violations of Policies at the next Committee meeting, or sooner if deemed necessary. These reports shall include explanations of the violations and appropriate recommendations for corrective action.

- B. The General Pension Consultant ("Consultant") is responsible for:

Monitoring, evaluating, and reporting at least annually, to the Committee, on the performance of the LA Programs relative to the appropriate benchmarks and Policy.

- C. For those LA Programs managed by an External Manager(s) ("Manager(s)"), the Manager is responsible for all aspects of portfolio management and shall fulfill the following duties:

1. Communicate with Staff as needed regarding investment strategy and investment results;
2. Monitor, analyze, and evaluate performance relative to the agreed upon benchmark; and
3. Cooperate fully with CalPERS' Staff, Custodian, and Consultant concerning requests for information.

#### IV. PERFORMANCE OBJECTIVE AND BENCHMARK

The performance objective of the LA Program is to exceed the benchmark return which is the Lehman Brothers Aggregate Index ("LAI").

#### V. INVESTMENT APPROACHES AND PARAMETERS

- A. Philosophy and Approach

The investment approach is to identify opportunities across bond market sectors and invest where risks are both understood and manageable while complying with specifications in this Policy. Corporate, sovereign, and mortgage-backed securities may receive a greater allocation than the LAI given the higher return expectations. Studies indicate that optimal sector allocations in fixed income favor corporate and mortgage-backed securities over U.S. Treasury and Agencies. These studies and the assumed low liquidity requirements serve as the foundation for a strategy that sacrifices the quality and liquidity of U.S. Treasuries for higher returning corporate, mortgage, and sovereign securities.

## B. Specific Risk Parameters

CalPERS shall manage the following major categories of fixed income risk:

1. Interest Rate Risk must be controlled using duration management. The duration shall be maintained at  $\pm 20\%$  of the LAI on an option adjusted basis. Decisions shall be managed using historical real return relationships and economic analysis.
2. Yield Curve Risk must be managed in a controlled, disciplined fashion by monitoring key rate durations and principal component durations.
3. Convexity Risk must be managed using option-adjusted and scenario analyses.
4. Sector Risk must be controlled using the ranges below. Based on the economic outlook, historical factors, and break-even analysis, Staff shall estimate the impact on various sector spreads and returns and make allocations accordingly.

## a. Permissible Ranges of Sectors

Each sector has a range by which actual allocations can fluctuate.

**TOTAL FIXED INCOME PORTFOLIO WEIGHTINGS**

Sector	LAI as of 3/08	Sector Ranges
U.S. Treasury & Government Sponsored	32%	0% - 80%
Securitized	45%	0% - 70%
Corporates	23%	10% - 50%
Opportunistic	0%	0% - 20%

5. Credit Risk must be controlled by requiring minimum ratings by sector as outlined below in Section V.B.5.a-c. Credit risk shall be actively managed through rigorous credit analysis. A downgrade of a security which creates a violation in the guidelines shall require an immediate sale unless the Senior Investment Officer of Global Fixed Income determines that the sale potentially reduces the total return to CalPERS. The following is the minimum credit quality for each of the sectors.

## a. Treasury &amp; Government Sponsored

The weighted-average credit quality shall be AAA rated.

b. Corporates

The minimum credit quality of corporate issuer is [investment grade](#) (at least Baa3 or P2 by Moody's or BBB- or A2 by S&P).

This sector includes domestic and U.S. dollar-denominated and hedged into U.S. dollar non-dollar fixed income public utilities, transportation, industrials, and bank and finance companies. Internal research staff shall review all corporate issuers at least annually. The annual review of issuers shall not apply, where the investment in corporate bonds is driven by a favorable macro-view of the corporate sector versus another sector like U.S. Treasuries and the implementation is done through a portfolio primarily managed through extensive issue diversification and industry constraints to minimize event and idiosyncratic risk.

Non-rated bonds must receive an investment grade rating (BBB- or better) from the internal research staff at the time of purchase. The internal research staff shall review all securities at least annually.

c. Securitized

The minimum average-weighted credit quality of the LA Program will be AA rated.

6. Structure Risk must be managed using option-adjusted, scenario and prepayment analysis.
7. Reinvestment Risk must be managed through [call risk](#) and cash flow analysis.
8. Liquidity Risk is reduced due to CalPERS' strong cash flow.
9. Currency Risk is reduced by requiring all securities to be denominated or hedged in U.S. dollars.

C. **Restrictions and Prohibitions**

1. Investments in a single corporate issuer shall not exceed 2% of the **total** LA Program. For AAA rated asset-backed and mortgage-backed securities, each separate trust (pool of assets) is defined as a separate issuer and shall not exceed 10% of the total LA Program.

For High Quality LIBOR, Short Duration, and State Street STIF, no single issuer limit exists;

2. Non-investment grade securities must not exceed a maximum of 20% of the total LA Program;
3. Option adjusted durations of the total LA Program must be within  $\pm 20\%$  of the option adjusted LAI duration;
4. All sectors must be within the permissible ranges specified in Section V. B. 4. a.;
5. CBO/CLO/CDO equity must not exceed a maximum of 5% of the total LA Program; and
6. Tobacco company investments are prohibited.

**D. Authorized Securities**

1. Treasury and Government Sponsored Securities (including derivative securities whose deliverable instrument is a U.S. Treasury or government obligation);
2. Publicly Traded Investment Grade Corporate Bonds;
3. Privately Placed Investment Grade Corporate Bonds;
4. Publicly Traded Mortgage-Backed Securities, including CMOs/ REMICs whose deliverable instrument or underlying collateral is a U.S. mortgage-backed security;
5. U.S. Privately Placed Investment Grade Mortgage-Backed Securities including single-family residences, commercial loans, and other privately placed mortgage-backed securities;
6. Investment Grade Asset-Backed Securities;
7. Investment Grade Global Bonds;
8. Investment Grade Preferred Stock;
9. Investment Grade Municipal Bonds;
10. Investment Grade Non-Dollar Fixed Income hedged into U.S. dollars that are consistent with the Foreign Debt Policy (Attachment A);

11. Derivatives, subject to the requirements of Section VI; and
12. Opportunistic Securities (see Section VII).

## VI. DERIVATIVES AND LEVERAGE POLICY

### A. Financial Futures, Swaps, and Options

All transactions involving derivatives and leverage are governed by CalPERS' Statement of Investment Policy for Development of Derivatives Strategies ("Derivatives Policy"). In addition to the restrictions defined in the Derivatives Policy, the following conditions apply:

1. Short selling of securities is prohibited, except in financial futures (as outlined in Section VI. A. 4.);
2. Leverage is prohibited except futures positions where there are associated cash positions (which effectively creates a synthetic bond);
3. The Staff may buy or sell the following fixed income related derivatives: swaps, financial futures, options on financial futures, options on volatility, options on underlying securities, and options on securities indices, which includes over-the-counter options (as specified in Section V. D. 1.); and
4. Acceptable strategies include bona fide hedges (to help achieve the target durations) and strategies that exploit the market's erroneous estimation of the volatility of interest rates. Other acceptable strategies include taking advantage of inaccurately priced instruments or using a more efficient method of implementing the investment objectives of the LA Program.

### B. Restrictions and Prohibitions

1. Uncovered call writing is prohibited.
2. Premiums on purchased options on futures may not exceed 1% of the beginning market value of the total LA Program in any calendar year.
3. Speculation between two derivatives is prohibited. Note, if a derivative is more attractively priced than the underlying security, the transaction is considered a substitution.
4. A maximum of 3% of the total LA Program may be invested in mortgage securities that are leveraged (e.g., inverse floaters).

**C. Counterparty Exposure for Options, Swaps and Futures**

1. The greater of \$500 million or 25% of the total notional derivative exposure can be maintained with any one counterparty for non-exchange-traded derivatives (e.g., swaps, [caps](#), [floors](#), and options).
2. Transactions shall be executed with only domestic or non-U.S. brokers registered in the U.S. or the U.K. who have a short-term debt rating by at least two of the following three rating agencies:

A1 (S&P) and P1 (Moody's), or F1 (Fitch Ratings), or rated on a long-term basis A3 (Moody's) A- (S&P), or A- (Fitch Ratings Services). The internal research staff shall actively review these brokers.

**VII. OPPORTUNISTIC INVESTMENTS**

- A. Securities or sub-asset classes, which are candidates for inclusion, shall have risk, return, and correlation profiles sufficiently different from other sectors such that their inclusion or exclusion can affect the risk and return expectations of the LA Program. The criteria for inclusion into this classification shall include, but are not limited to:
  1. Sufficient size, liquidity, and cost efficiency to allow a meaningful amount to be invested and have an impact on the total return.
  2. Availability of sufficient internal or external investment and technical expertise to insure prudent implementation of an investment in that sub-asset class.
  3. Presence of diversification, return enhancement, or some other readily identifiable attribute which is sufficiently different from other asset classes and which enhances the LA Program's ability to achieve the strategic objectives outlined in this Policy.
  4. Acceptance by other large money managers or financial institutions as a viable and meaningful sub-asset class or in the absence of such acceptance, academic basis or foundation for its inclusion.
  5. Availability of sufficient data, history or expertise to assess the viability or benefit of the asset class to the LA Program and to have an investment outcome that is measurable from such an asset class. Further, the asset class must have a basis for developing expected investment return, risk, and correlations for purposes of the financial study.

- B. A sub-asset class may be approved for investment provided that it meets the criteria above and that the Senior Investment Officer of Global Fixed Income has reviewed educational literature and other sources or both to fulfill fiduciary responsibility and has received approval by the Chief Investment Officer.
- C. Permitted Opportunistic Investments
1. Domestic and Hedged Non-Dollar non-investment grade, including corporate zero and PIK securities;
  2. Leveraged and Un-leveraged Bank Loans;
  3. Asset Based Loans;
  4. Non-investment grade CBO/CLO/CDO securities;
  5. Convertible Bonds;
  6. CMO residuals;
  7. Dollar-Denominated and Hedged Non-Dollar Sovereign Debt of countries that meet the requirements of Foreign Debt Policy (Attachment A); and
  8. Other sub-asset classes may be added if they fit Section VII, A and B.

## VIII. CALCULATIONS AND COMPUTATIONS

Investors, managers, consultants, and other participants selected by CalPERS shall make all calculations and computations on a market value basis as recorded by CalPERS' Custodian, unless otherwise provided in attachments.

## IX. GLOSSARY OF TERMS

Key words used in this policy and attachments are defined in CalPERS' Master Glossary of Terms.

### Self-Funded Healthcare:

Approved by the Policy Subcommittee:	September 17, 1999
Adopted by the Investment Committee:	November 15, 1999
Revised by the Policy Subcommittee:	December 10, 2004
Approved by the Investment Committee:	February 14, 2005
Revised by the Policy Subcommittee:	August 11, 2006
Approved by the Investment Committee:	September 11, 2006



Name changed to Lehman Aggregate Program:

Revised by the Policy Subcommittee: April 21, 2008

## FOREIGN DEBT POLICY

April 21, 2008

### **Global Debt Issued by National Governments**

The policy stipulations for global debt issued in major markets differ somewhat for externally managed holdings denominated in major nondollar currencies and for internally managed holdings denominated in the dollar. The differences are found in the approach to limiting portfolio concentration in emerging markets, while minimum credit rating requirements are the same for both. The stipulations are as follows:

For both externally and internally managed portfolios, global bonds issued by national governments must have a credit rating of BB- or higher from S&P or Fitch, or Ba3 or higher from Moody's.

Holdings of global bonds are counted toward the aggregate limit of the benchmark weight +5% on an external Manager's combined holdings of emerging market debt and are subject to the benchmark weight +5% limit on holdings of a single country.

### **Local-Currency Debt of Foreign National Governments and All Foreign Debt of Corporations and Subnational Governments (i.e., Provincial, State, and Municipal)**

1. Both the issuer and the issuer's national government (if the issuer is not the national government itself) must be rated investment grade, at least BBB- by S&P or Fitch, or Baa3 by Moody's. Even in the case of local-currency debt, this requirement must be satisfied by long-term foreign currency ratings instead of local-currency ratings, which are generally higher because a country can easily print more of its own currency to meet its local debt obligations. This unconventional, very conservative application of the rating requirement will give extra protection against the special foreign-exchange valuation and retrieval risks of local-currency debt.
2. The country must be part of the Lehman Global Aggregate Index, a widely followed index which includes only those local markets that are fairly liquid and fairly well developed.
3. The country's currency must be fully convertible in the spot market for foreign investors, so that managers may retrieve CalPERS' funds without limit or obstruction.
4. Holdings of [local currency debt](#) are subject to an aggregate limit of the benchmark weight +5% on a Manager's combined holdings of emerging market debt, as well as a concentration limit of the benchmark weight +5% on a Manager's holdings of a single country.

Asset Class Glossary: Global Fixed Income  
Policy: Lehman Aggregate Program  
April 21, 2008

**Asset-Backed Security**

A security collateralized by assets such as automobile loans, agricultural equipment loans, and credit card loans. The loans are securitized by the issuer and usually placed with a trustee.

**Asset Based Loans**

Secured debt that is loaned to primarily non-investment grade borrowers for mostly working capital, acquisitions, turnarounds, growth financing, debtor-in-possession financing (DIP Financing), exit financing, and corporate recapitalization/reorganizations.

**Break-Even Analysis**

Uses results from the scenario analysis. Since all projections should be viewed as risky, evaluating the sensitivity of the projected return to adverse market movements is critical. The break-even analysis calculates the movement required to reduce the sector or portfolio returns to a specified level at some horizon. This analysis creates a form of risk/return ratio. The higher the break-even value, the more the cushion against an adverse movement in rates.

**Call Risk Analysis**

Examines the portfolio's callable securities and estimates the amount of principal returned for a given drop in interest rates.

**Caps**

Designed to provide insurance against the rate of interest on a floating rate loan rising above a certain level (known as the cap rate).

**Chief Investment Officer**

Heads the CalPERS Investment Office and works with the Committee to develop a long-term investment policy and asset allocation strategy for the Public Employees' Retirement Fund.

**Convertible Bond**

A bond that has a provision that permits conversion to the issuer's stock at some fixed ratio.

**Convexity**

The price change from a move in interest rate that cannot be explained by duration only. Positive convexity (when price rises more than expected and falls less) comes at a cost (lower yield). Negative convexity (price rises less than expected and falls more) usually comes with higher yield.

**Convexity Risk**

Convexity Risk is the downside risk of an equal move up or down in interest rates, causing greater price loss than price gain.

**Credit Rating**

A current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. In the case of split ratings, the higher rating of either Moody's, Standard & Poor's, or Fitch Investor Services shall apply.

**Credit Risk**

Credit Risk is the uncertainty surrounding the borrower's ability to repay its obligations.

**Currency Risk**

Currency Risk is the price volatility emanating from the value of the U.S. dollar relative to other currencies of the world.

**Custodian**

A bank or other financial institution that provides custody of stock certificates and other assets of an institutional investor.

**Derivative**

An instrument whose value is based on the performance of an underlying financial asset, index, or other investment. Classes of derivatives include futures contracts, options, currency forward contracts, swaps, and options on futures.

**Duration**

A measure of price sensitivity to interest rate changes. Duration is the anticipated percentage move in price given a 100 basis point (1 percent) move in interest rates.

**Economic Analysis**

Examines reference points for indications on what to look for and what events are considered significant in the economy to understand relationships among complex and often seemingly unrelated events. This analysis is used in making decisions concerning duration and sector weightings.

**Financial Futures**

A contract to trade a financial investment, like a Treasury bond, at a specific price and future date. As interest rates rise or fall, the value of such contract falls or rises respectively.

**Floors**

Provide insurance against rate of interest on a floating rate loan dropping below a certain level.

**Futures**

Exchange-traded contracts to buy or sell a standard quantity of a given instrument, at an agreed price, and date. A future differs from an option in that both parties are obliged to abide by the transaction. Futures are traded on a range of underlying instruments including commodities, bonds, currencies, and stock indices.

**General Pension Consultant**

An individual or organization that provides specialized professional assistance to the Investment Committee in determining the pension fund's asset allocation model or optimal combination of investments in order to maximize risk-adjusted investment returns in a manner consistent with the State's long-term pension liabilities.

**Historical Factors**

A review of past relationships and the environment associated with them to assess the relative investment potential of the current market conditions and relationships.

**Interest Risk Rate**

Interest Risk Rate is the price volatility produced by changes in the overall level of interest rates as measured by an option-adjusted duration.

**Inverse Floaters**

A derivative instrument with a coupon rate, which cannot go below zero, that moves inversely with an index rate like London Interbank Offer Rate or 11th District Cost of Funds Index, usually with a leverage factor. The higher the leverage factor, the greater the price sensitivity.

**Investment Grade**

A minimum credit rating of Baa3 by Moody's Investor Service or BBB- for Standard & Poor's Corporation, and BBB- by Fitch. Investment grade ratings apply to issuers whose financial risk is relatively low and the probability of future payment relatively high.

**Lehman Brother's U.S. Aggregate Index**

This index covers the available market for dollar denominated fixed income securities. It includes all bonds with a remaining maturity of one year or longer with amounts of at least \$250 million outstanding. This includes investment grade corporate, investment grade sovereign, U.S. governments, and mortgage securities. The duration or interest rate sensitivity of this index versus the Lehman Brothers Long Liability Index is significantly less.

**Leverage**

A condition where a portfolio's market obligation may exceed the market-value-adjusted capital commitment by the amount of borrowed capital (debt).

**Leveraged Bank Loans**

Loans made by banks that are typically partially secured by assets and are made to non-investment grade companies with a debt/EBITDA ratio greater than 3.5 and have a spread to LIBOR of greater than 250 basis points.

**Liquidity Risk**

Liquidity Risk is the ease with which an issue or specified amount can be sold at or near prevailing market prices.

**Mortgage Backed Security (MBS)**

A general term used to describe securities backed by mortgages. MBSs are broken down into four types of securities: mortgage pass-through, mortgage-backed bond, collateralized mortgage obligation (CMO), and stripped mortgage-backed bonds. Mortgage pass-throughs are pooled loans, typically issued by the Government National Mortgage Association, Federal National Mortgage Association, and Federal Home Loan Mortgage Corporation. Mortgage-backed bonds have mortgage loans as collateral, but the term and interest payments are fixed. CMOs are defined above. Stripped mortgage-backed securities have the principal and interest distribution altered from a pro rata distribution to an unequal distribution.

**Non-Investment Grade**

Securities that are rated at or below Ba1 by Moody's, BB+ by Standard & Poor's, and BB+ by Fitch Ratings. These securities are also known as high yield , speculative, or junk bonds.

**Option**

Contracts that give the purchaser the right, but not the obligation, to buy or sell an underlying instrument at a certain price (the exercise or strike price) on or before an agreed date (the exercise period). For this right, the purchaser pays a premium to the seller. The seller (writer) of an option has a duty to buy or sell at the strike price, should the purchaser exercise his right.

**Option-Adjusted Analysis**

A method that strips out embedded options in securities such as callable bonds and mortgage-backed securities, enabling comparisons with other security types within a consistent framework.

**Over-the-Counter (OTC)**

The market for securities and traded products that are not listed on the major exchanges. OTC options are options with negotiated premium, strike price, and expiration date.

**PIK (Payment in Kind)**

Bonds or preferred stock whose interest is paid in the form of additional bonds or preferred stock.

**Preferred Stock**

Stock shares that represent a portion of ownership in a company, with the shares normally carrying fixed dividends. Sometimes the shares have voting rights, but not generally.

**Premium**

The cost paid or revenue received for an option.

**Prepayment Variability Analysis**

A method that stress tests Collateralized Mortgage Obligations by varying prepayment assumptions to understand and anticipate how the structure changes in a constantly fluctuating interest rate environment.

**Reinvestment Risk**

Reinvestment Risk is the uncertain future yield opportunities for investing funds that become available due to call, maturity, or coupon payments.

**Scenario Analysis**

Projects returns over a number of changing situations (such as interest rates, curve twists, spreads, etc.) and weighs each situation to arrive at an average expected return. This process allows comparisons to varying types of securities and portfolios.

**Sector Risk**

Sector Risk is the risk of holding sectors proportionally different from the index.

**Senior Investment Officer of Global Fixed Income**

The Senior Investment Officer is responsible for all Global Fixed Income programs and reports directly to the Chief Investment Officer of CalPERS.

**Securitized**

Securitized are fixed income securities that are typically mortgaged or asset-backed securities that are investment grade rated. Examples include FNMA, FHLMC, and GNMA mortgage pass through securities, as well as commercial mortgage-backed securities.

**Short Selling**

Selling securities that are not owned and buying them back later to: 1) take advantage of an anticipated decline in the price; or 2) to protect a profit in a long position.

**Sovereign**

A security issued by a foreign government or government sponsored agency.

**Speculation**

Assumption of risk in anticipation of gain but recognizing a higher than average possibility of loss.

**Structure Risk**

Structure Risk arises from the options implicit in bonds (e.g. callable and optional sinking fund bonds) or the rules governing cash flow that differs from expectations.

**Swap**

Private agreement between two companies to exchange cash flows in the future according to a prearranged formula.

**Uncovered Call**

A strategy in which an investor writes (sells) call options on the open market without owning the underlying security. This stands in contrast to a covered call strategy, where the investor owns the security shares that are eligible to be sold under the options contract.

**Un-leveraged Bank Loans**

Loans made by banks that are typically partially secured by assets and are made to investment grade companies with a debt/EBITDA ratio less than 3.5 and have a spread to LIBOR of less than 250 basis points.

**Yield Curve Risk**

Yield Curve Risk is the price changes induced by the changing slope of the yield curve.